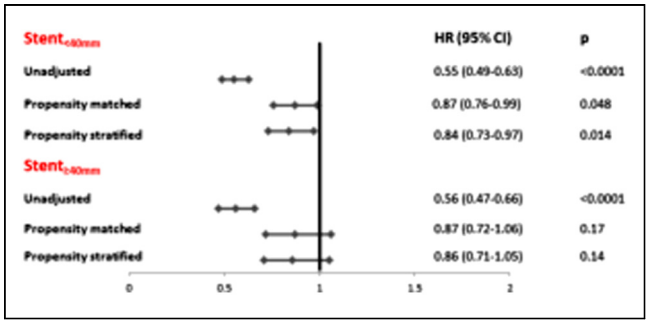
prasugrel influences ischemic benefit in real world acute coronary syndrome (ACS) patients irrespective of stent length.

METHODS PROMETHEUS was a retrospective multicenter observational study comparing clopidogrel and prasugrel use in patients undergoing PCI for acute coronary syndrome. MACE was defined as a composite of death, myocardial infarction, stroke and unplanned revascularization at one year. We compared outcomes between clopidogrel and prasugrel treatment stratified by stent length < or ≥40 mm.

RESULTS Prasugrel was given to 20.0% and 22.0% of patients receiving short (n=14790) and long stents (n=4695) respectively. Compared with clopidogrel treated patients, those receiving prasugrel were younger, more often male, with lower frequencies of diabetes, prior PCI, renal dysfunction and anemia but higher left ventricular ejection fraction. The incidence of STEMI presentation, B2/C type lesions, single vessel and non-significantly calcified disease was higher in prasugrel treated patients with a greater likelihood to receive drug eluting stents and stents >2.5mm in diameter. The overall crude MACE rate for the study population was 12.1% vs 20.7% with prasugrel compared with clopidogrel, p<0.001. In the short-stent group prasugrel was associated with a significantly lower risk for MACE prior to adjustment (10.7% vs. 18.6%, p<0.001). Analogous event rates in the long-stent group were 15.8% and 26.7%, respectively (p<0.001). Results remained significant for short but not long stents after adjustment without evidence of interaction (p=0.98) (Figure).

CONCLUSIONS Compared with clopidogrel, prasugrel use afforded ischemic benefit irrespective of stent length in real-world ACS patients undergoing PCI.



CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

KEYWORDS Acute coronary syndromes, Angioplasty, Antiplatelet therapy

TCT-220

Effect of prasugrel versus clopidogrel in ACS patients with high or low BMI undergoing PCI: Results from the PROMETHEUS Study

Jaya Chandrasekhar,[1] Usman Baber,[1] Samantha Sartori,[2] Melissa Aquino,[3] Craig E. Strauss,[4] Joseph B. Muhlestein,[5] Sandra Weiss,[6] Mark B. Effron,[7] Stuart Y. Keller,[7] Brian A. Baker,[8] Jennifer Chao,[2] Sunil Rao,[9] Samir Kapadia,[10] Kanhaiya L. Poddar,[10] Anthony DeFranco,[11] Annapoorna Kini,[12] William Weintraub,[13] Timothy D. Henry,[14] Roxana Mehran[15]

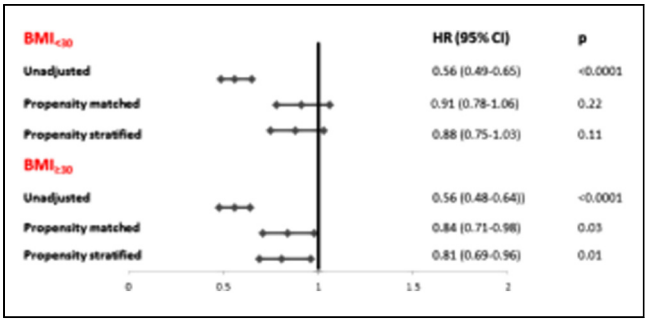
[1]Icahn School of Medicine at Mount Sinai, New York, NY; [2]Mount Sinai School of Medicine, New York, NY; [3]The Icahn of Medicine at Mount Sinai, New York, NY; [4]Minneapolis Heart Institute Foundation at Abbott Northwestern Hospital, Minneapolis, MN; [5]Intermountain Medical Center, Murray, UT; [6]Christiana Care Health system, Newark, DE; [7]Eli Lilly and Company, Indianapolis, IN; [8]Daiichi Sankyo, Parsippany, NJ; [9]Duke University Medical Center, Durham, NC; [10]Cleveland Clinic, Cleveland, OH; [11]Aurora Cardiovascular Services, Milwaukee, WI; [12]mount Sinai, New York, NY; [13]Christiana Care Health System, Newark, United States; [14]Cedars-Sinai Medical Center, Los Angeles, CA; [15]Icahn School of Medicine at Mount Sinai, New York, United States

BACKGROUND Despite pharmacological advantages, prasugrel may be preferentially used in patients with higher body-mass index (BMI) in the real-world due to concerns regarding bleeding. We sought to examine the frequency of prasugrel use in patients with lower (<30) and higher (≥30) BMI, and to compare the MACE rate in these subgroups for patients treated with prasugrel versus clopidogrel.

METHODS PROMETHEUS was a retrospective multicenter observational study comparing clopidogrel and prasugrel use in patients undergoing PCI for acute coronary syndrome. MACE was defined as a composite of death, myocardial infarction, stroke and unplanned revascularization at one year. We compared outcomes between clopidogrel and prasugrel treatment stratified by BMI.

RESULTS Prasugrel was given to 19.0% and 22.0% of patients with BMI<30 (n=10678) and BMI≥30 (n=9184) respectively. Compared with clopidogrel, prasugrel treated patients were younger, male, with less diabetes or prior PCI but greater incidence of smoking at baseline and a STEMI/NSTEMI presentation. They had a greater incidence of B2/C type lesions but single vessel and non-significantly calcified disease with a greater likelihood to receive longer stents and stents >3.0mm in diameter. The overall crude MACE rate for the study population was 12.1% vs 20.7% with prasugrel compared with clopidogrel, p<0.001. In the BMI<30 group prasugrel was associated with a significantly lower risk for MACE prior to adjustment (12.7% vs. 21.3%, p<0.001). Analogous event rates in the BMI≥30 group were 11.5% and 19.9%, respectively (p<0.001). Results remained significant for BMI≥30 but not BMI<30 without evidence of interaction after adjustment (p=0.98) (Figure).

CONCLUSIONS In a real world setting, the use of prasugrel was similar in patients with BMI < and ≥30. Compared with clopidogrel, prasugrel use afforded ischemic benefit irrespective of BMI in real-world ACS patients undergoing PCI.



CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

KEYWORDS Acute coronary syndromes, Antiplatelet therapy, Body Mass Index

TCT-221

Impact of prasugrel versus clopidogrel in smokers and non-smokers undergoing PCI for ACS: Results from the PROMETHEUS Study

Jaya Chandrasekhar,[1] Usman Baber,[1] Samantha Sartori,[2] Melissa Aquino,[3] Anthony DeFranco,[4] Joseph B. Muhlestein,[5] Sandra Weiss,[6] Timothy D. Henry,[7] Mark B. Effron,[8] Craig E. Strauss,[9] Stuart Y. Keller,[8] Brian A. Baker,[10] William Weintraub,[11] Jennifer Chao,[2] Kanhaiya L. Poddar,[12] Sunil Rao,[13] Samir Kapadia,[12] Annapoorna Kini,[14] Roxana Mehran[15]

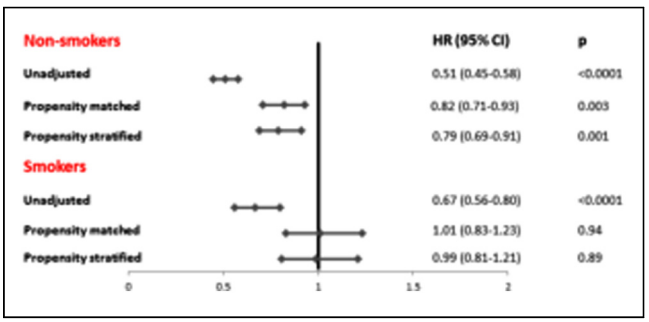
[1]Icahn School of Medicine at Mount Sinai, New York, NY; [2]Mount Sinai School of Medicine, New York, NY; [3]The Icahn School of Medicine at Mount Sinai, New York, NY; [4]Aurora Cardiovascular Services, Milwaukee, WI; [5]Intermountain Medical Center, Murray, UT; [6]Christiana Care Health system, Newark, DE; [7]Cedars-Sinai Medical Center, Los Angeles, CA; [8]Eli Lilly and Company, Indianapolis, IN; [9]Minneapolis Heart Institute Foundation at Abbott Northwestern Hospital, Minneapolis, MN; [10]Daiichi Sankyo, Parsippany, NJ; [11]Christiana Care Health System, Newark, United States; [12]Cleveland Clinic, Cleveland, OH; [13]Duke University Medical Center, Durham, NC; [14]mount Sinai, New York, NY; [15]Icahn School of Medicine at Mount Sinai, New York, United States

BACKGROUND Smoking increases cardiovascular risk, yet paradoxically smokers demonstrate better prognosis compared with non-smokers with clopidogrel use. Randomized data have shown improved outcomes in medically managed smokers treated with prasugrel rather than clopidogrel for acute coronary syndrome (ACS). We sought to determine if a similar effect was observed with real world use for ACS patients undergoing PCI.

METHODS PROMETHEUS was a retrospective multicenter observational study comparing clopidogrel and prasugrel use in patients undergoing PCI for acute coronary syndrome. MACE was defined as a composite of death, myocardial infarction, stroke and unplanned revascularization at one year. We compared outcomes between clopidogrel and prasugrel treatment stratified by smoking status.

RESULTS Prasugrel was given to 23.5% and 19.3% of smokers (n=5006) and non-smokers (n=14900) respectively. Compared with clopidogrel, patients receiving prasugrel were younger, male, with higher BMI and less diabetes or prior PCI. They were more likely to present with NSTEMI or STEMI and demonstrated higher left ventricular ejection fraction. Although they had a greater incidence of B2/C lesions, severe calcification and bifurcation lesions were less common. The use of bare metal stents was lower in prasugrel treated patients with a tendency to receive longer stents and stents >2.5mm in diameter. The overall crude MACE rate for the study population was 12.1% vs 20.7% with prasugrel compared with clopidogrel, p<0.001. In the smoking group, prasugrel was associated with a significantly lower risk for MACE prior to adjustment (14.2% vs. 20.7%, p<0.0001). Analogous event rates in the non-smoking group were 11.2% and 20.6%, respectively (p<0.0001). Results remained significant for non-smokers but not smokers with evidence for interaction after adjustment (p=0.02) (Figure).

CONCLUSIONS Compared with clopidogrel use, prasugrel was associated with an accentuated benefit in non-smokers compared to smokers with ACS undergoing PCI.



CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

KEYWORDS Acute coronary syndromes, Antiplatelet therapy, Smoking

TCT-222

Long-Term Use of Dual antiplatelets For The Secondary Prevention of Atherothrombotic Events In Patients with Coronary Artery Disease: Meta-analysis of Randomized Controlled Trials.

Zaher Fanari,[1] Amratash Malodiya,[2] Sandra Weiss,[2] Sumaya Hammami,[2] Paul Kolm,[2] William Weintraub[2]
[1]University Of Kansas School of Medicine, Kansas City, KS; [2]Christiana Care Health System, Newark, DE

BACKGROUND The potential benefit of long-term dual antiplatelet therapy (DAPT) for secondary prevention of atherothrombotic events in patients with coronary artery disease (CAD) is unclear. Data from different randomized controlled trials (RCT) using different agents in different subgroups showed inconsistent results. The goal of this study was to evaluate the efficacy and safety of long term DAPT for secondary prevention.

METHODS We performed a systematic review and meta-analysis from RCTs that tested different prolonged durations of DAPT for secondary prevention. Long term DAPT (L-DAPT) arm was defined as those receiving DAPT for more than 12 months. The long-term aspirin arm (L-ASA) was defined as those receiving either long-term aspirin monotherapy or DAPT for 6 months or less.

RESULTS Our systematic literature search identified 2456 articles, of which 6 met the inclusion criteria for this analysis. These 6 RCT included a total of 47,734 patients (27657 L-DAPT and 20077 L-ASA). The use of L- DAPT was associated with a significant decrease in composite of death, myocardial infarction (MI) and stroke (6.08% vs. 6.71%; Odd Ratio OR= 0.86 [0.78 -0.94]; P=0.001). The reduction was mainly driven by a reduction in MI, but not in death, cardiac death or stroke. This reduction of death, MI and stroke was mainly noticed in patients with prior MI (6.32% vs. 7.28%; OR= 0.86 [0.79 -0.94]; P <0.001) but in those who had PCI with no MI. The reduction was seen with post PCI patients with prasugrel (3.10% vs. 5.90%; OR= 0.53 [0.37 -0.74]; P<0.001) and only in those with prior MI with clopidogrel (4.89% vs. 6.28% OR= 0.77 [0.66 -0.9]; P<0.01) and ticagrelor (6.95% vs. 5.72%; OR= 0.84 [0.75 -0.93]; P=0.001). Long-term use of DAPT was associated with significant increase in major bleeding (1.47% vs. 0.88%; OR= 1.65 [1.23 - 2.21]; P=0.001).

CONCLUSIONS Long-term use of DAPT for secondary prevention is associated with lower risk of death, MI and stroke in patients with prior MI, but it is associated with increased risk of bleeding. Prolonging DAPT requires careful assessment of the trade-off between ischemic and bleeding complications and should probably be reserved for those with highest risk for atherothrombotic events.

CATEGORIES CORONARY: Pharmacology/Pharmacotherapy

KEYWORDS Dual antiplatelet therapy, Prevention

TCT-223

Do hematocrit and hemoglobin levels influence the assays of on-treatment platelet reactivity to clopidogrel?

Tao Chen,[1] Yawei Yang,[1] Pan Li,[1] Yongwen Qin,[1] Xianxian Zhao,[1] Liping Ma[1]
[1]Changhai Hospital, Shanghai, China

BACKGROUND Previous studies have reported a considerable association hematocrit and hemoglobin had with the VerifyNow P2Y12 assay results. However, little has been documented on association between results and hematocrit/hemoglobin. This study was conducted to evaluate the influence of hematocrit/hemoglobin on the results of 2 different platelet function tests.

METHODS On-treatment platelet reactivity to clopidogrel was tested in 102 Consecutive patients with AMI or coronary artery in-stent restenosis treated with standard-dose clopidogrel. Platelet function was evaluated with both VerifyNow P2Y12 and VASP assays.

RESULTS Lower hematocrit/hemoglobin was found to be associated with higher P2Y12 reaction unit (PRU) and a higher rate of HTPR (P < 0.001) as measured by VerifyNow assay. No differences were seen among the 4 groups in platelet reactivity measured by VASP assay. Although the VerifyNow P2Y12 assay results demonstrated a significant inverse correlation with hematocrit (r=−0.441, p < 0.005), there was no such correlation found between the VASP assay results and hematocrit(r=0.054, p > 0.05). In multivariate analysis, anemia was an independent predictor of high on-treatment platelet reactivity (HTPR), defined as a VerifyNow P2Y12 reaction unit level of >208 (p < 0.005), but it was found to have no correlation with VASP assay.

CONCLUSIONS Hematocrit/hemoglobin significantly influenced the VerifyNow P2Y12 assay results, presumably an in-vitro phenomenon. Lower baseline hematocrit/ hemoglobin was found to be independently associated with HTPR by VerifyNow P2Y12 assay but not by VASP. Hematocrit level should therefore be considered when the results of the VerifyNow P2Y12 assay are interpreted.

CATEGORIES CORONARY: Thrombus / Thrombectomy and Embolic Protection

KEYWORDS Clinical Studies, Clopidogrel, Clopidogrel low response